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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 12

Application Number: 09/369,570
Filing Date: August 06, 1999
Appellant(s): TONCELLI, MARCELLO

J. Harold Nissen
For Appellant

EXAMINER'S ANSWER

This is in response to appellant's brief on appeal filed 1-29-01.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The amendment after final rejection filed on 11-27-2000 has been entered.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is incorrect. A correct statement of the issues on appeal are as follows:

(1) Whether claims 21-38 are properly rejected under 35 USC 251 as being improper recapture of broadened claimed subject matter surrendered in the application for patent upon which the present reissue is based;

(2) Whether claims 21-25 are properly rejected under 35 USC 103(a) as being unpatentable over E.P. 255,795 in view of Japanese Patent 3-247852, optionally further taken with Japanese Patent 6-64076, and

(3) Whether claims 8-13 and 26-38 are properly rejected under 35 USC 103(a) as being unpatentable over E.P. 631,015 in view of Japanese Patent 6-64076, Japanese Patent 3-247852 and E.P. 255,795.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 8-13 and 21-38 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8). The Brief has identified seven distinct groupings of claims.

(8) Claims Appealed

A correct copy of appealed claims 8-13and 21-32 appears in the appendix to the Brief. The appendix to the Brief failed to include a copy of appealed claims 33-38. Appealed claims 33-38 read as follows:

33. The process according to claim 31, wherein said rods or bars comprise 68% glass and 32% resin, the percentage being expressed by weight.

34. The process according to claim 21, wherein said ratio by weight between the resin and the glass reinforcing elements is 4555.

35. The process according to claim 21, including hardening of the resin with a catalyst and/or application of heat.

36. The process according to claim 27, wherein said further linear reinforcing members comprise four 4800 TEX (19.6 g/m) glass threads laid down within grooves formed in the slabs having a dimension of 3 to 4 mm. in depth.

37. The process according to claim 36, wherein said glass threads are non-twisted and have a linear dilation coefficient of 8 to 9 x 10-6.

38. The process according to claim 26, wherein said glass threads are cylindrical and have a circular cross-section with a diameter between 2 and 2.5 mm., a linear dilation coefficient of 7.5 x 10^{-6} and a glass content of 68 percent and resin content of 32 percent by weight.

(9) Prior Art of Record

(A) Listing of Prior Art of Record

255,795	Rigas (European Patent)	02/1986
3-247852	Matsushita Ele. Works (Japanese)	11-1991
6-64076	Daiwa Wall, KK, et al (Japanese)	03-1994
631,015	Toncelli (European)	12-1994

(B) Brief Description of Prior Art of Record

E.P. 255,795 taught a process of reinforcing a stone slab where linear, non-twisted resin impregnated reinforcing members were employed to reinforce the stone slab. The reference was silent as to the percent of resin utilized in the reinforcing members.

Japanese Patent 3-247852 suggested that the amount of reinforcing fiber to resin in a reinforcement of a stone slab would have lied within the range of .5-2.0 (in other words up to twice as much fiber reinforcement to resin in the finished reinforcement disposed against the slab). The reference additionally suggested that multiple layers of reinforcement for the backside of the stone slab were known.

Japanese Patent 6-64076 evidenced that it was known to employ linear non-twisted reinforcing elements against the face of a stone slab. The reference additionally suggested that those skilled in the art would have recognized that multiple layers of reinforcement were known per se for reinforcing a stone slab.

E.P. 631,015 taught that it was known at the time the invention was made to dispose reinforcement into grooves provided in the backside of a stone slab in order to reinforce the same where the reinforcement included glass fibers disposed within the grooves.

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 251

Claims 21-38 are rejected under 35 U.S.C. 251 as being an improper recapture of broadened claimed subject matter surrendered in the application for the patent upon which the present reissue is based. See *Hester Industries, Inc.* v. *Stein, Inc.*, 142 F.3d 1472, 46 USPQ2d 1641 (Fed. Cir. 1998); *In re Clement,* 131 F.3d 1464, 45 USPQ2d 1161 (Fed. Cir. 1997); *Ball Corp.* v. *United States*, 729 F.2d 1429, 1436, 221 USPQ 289, 295 (Fed. Cir. 1984). A broadening aspect is present in the reissue which was not present in the application for patent. The record of the application for the patent shows that the broadening aspect (in the reissue) relates to subject matter that applicant previously surrendered during the prosecution of the application. Accordingly, the narrow scope of the claims in the patent was not an error within the meaning of 35 U.S.C. 251, and the broader scope surrendered in the application for the patent cannot be recaptured by the filing of the present reissue application.

In U.S. Patent 5,670,007 (of which this application is a reissue), the sole independent claim recited the following limitations:

> "providing a slab of stone material having a rear substantially smooth face **free of grooves or recess** ."(emphasis added)

and

> **"inserting a reinforcing layer between the coated non-twisted linear reinforcing elements and the rear face of the slab of stone material"** (emphasis added)

These are "omitted limitations" in the only independent claim in this application (09/369,570). "A reissue claim is broadened where some limitation of the patent is no longer in the reissue claim," see MPEP 1412.02, page 1400-9, Rev. 2, Feb. 2000. All of the reissue claims have been broadened to omit the limitation relating to: (1) the exclusion of grooves or recesses on the rear face of the stone slab, and: (2) the inclusion of a reinforcing layer between the coated non-twisted linear reinforcing elements and the rear face of the stone slab material.

If the limitation now being omitted or broadened in the present reissue was originally presented/argued/stated in the original application to make the claims allowable over a rejection or objection made in the original application, the omitted limitation relates to subject matter previously surrendered by applicant, and impermissible recapture exists. " MPEP 1412.02, page 1400-9, Rev. 2, Feb 2000. Both limitations were *presented* by appellant in the response dated 12-23-96 (a copy of which is attached hereto). The response was filed by appellant in an attempt to overcome a prior art rejection postulated by the examiner. Both limitation were strenuously *argued* by applicant in the response dated 12-23-96 in the patented file where applicant argued that:

> "Also emphasis has also been added to the claim to establish that it is a rear face of the stone slab material which is free from grooves or recesses, because as will be pointed out, this is another distinction from the prior art.", see page 5 of the response.

Additionally appellant is referred to page 7 of the response dated 12-23-96 where appellant argues that:

> "Clearly, Toncelli '015 calls for the formation of grooves, and the placement of the rods in the grooves, and then the placement of resin into the grooves. Applicant starts out with a non-grooved surfaces, and creates the formation of areas between which the resin is

> inserted by calling for the provision of the non-twisted linear reinforcing elements on to a rear face of a slab of stone material having a rear face free of grooves or recesses. This clearly removes all of the references of record, because the main references has been removed, and therefore the modifying references have also been removed."

Finally, the applicant is referred to page 4 where there is a discussion of the inclusion of claim 7 (which as originally presented recited that a reinforcing material was disposed between the non-twisted reinforcement and the slab) in claim 1 was addressed and applicant stated in the response dated 12-23-96 of the patent:

> "Claim 1 was also amended to include the subject matter of claim 7 and the additional limitation of hardening of the resin, both which limitations clearly distinguish claim 1 from the combination of references applied...".

The appellant is additionally advised that in response to the amendment filed by appellant dated 12-23-96 the examiner allowed claims 1-6 and 8-21 and presented the following reasons for allowance in the patented file (to which there were no comments made by applicant is response to the same):

> "None of the prior art of record teaches disposing a reinforcing layer between the linear reinforcing elements and the rear face of the slab of stone material (where rear face of the stone material was substantially smooth and free from grooves or recesses)".

Clearly, the reason that the earlier claims were allowed was because the rear face of the stone slab was free from grooves or recesses and there was a layer of reinforcing material between the linear non-twisted members and the rear face of the slab. Hence, the above noted "omitted limitations" was originally *presented* and strenuously *argued* in the original application to render the claims allowable over a prior art rejection and the examiner's reasons for allowance indicated that the "omitted limitations" distinguished over the prior art. The above noted omitted limitations therefore relate to subject matter previously surrendered in the original application.

"Reissue claims that are broader in certain aspects and narrower in other vis-à-vis claims canceled from the original application to obtain a patent may avoid the effect of the recapture rule if the claims are broader in a way that does not attempt to reclaim what was surrendered earlier." MPEP 1412.02 (REISSUE CLAIMS ARE BROADER IN SCOPE IN SOME ASPECTS, BUT NARROWER IN OTHERS). Also: "[i]f the reissue claim is as broad as or broader in an aspect germane to prior art rejection, but narrower in another aspect completely unrelated to the rejection, the recapture rule bars the claim", *In re Clement,* supra at 1165. The independent reissue claim is "narrower" in scope than the patented claim since the claim requires the use of non-twisted linear reinforcing elements which are of **glass** and additionally requires that there be a **layer** of such elements **applied to the rear face of the slab** (emphasis added). These narrowing limitations, however are **not** at all related to the "omitted limitations" of a groove and recess free surface and the insertion of a layer of reinforcement between the coated non-twisted reinforcing elements and the rear face of the slab of stone material and the manner in which they defined over the prior art. Since the narrowing aspect is not related to the prior art rejection and not related to the subject matter surrendered in the original application, recapture exists and claims 21-38 are properly rejected under 35 USC 251.

Claim Rejections - 35 USC § 103

Claims 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over E.P. 255,795 in view of Japanese Patent 3-247852, optionally further taken with Japanese Patent 6-64076.

E.P. '795 taught that it was known at the time the invention was made to reinforce a stone slab with a linear glass fiber reinforcement which included glass fiber roving which was coated

with a resin material. More specifically, the appellant is referred to the abstract of the disclosure and Figure 7, for example where it was evident that the reference suggested that thin stone slabs would have been reinforced with resin impregnated glass roving materials. Note that glass rovings are non-twisted linear reinforcing members. The reference taught that the reinforcing material would have been disposed against the backside of the stone slab in the form of mats or rovings. The reference failed to teach the specific amount of resin in the reinforcement applied to the back of the stone slabs. Note that the reference taught that the slabs of stone were of a thickness of 5-7 mm. The ordinary artisan, however, would have readily understood what amount of reinforcement to resin ratio to use in the final stone panels as evidenced by Japanese Patent '852.

Japanese Patent '852 taught that it was known reinforce an artificial or natural stone panel with resin impregnated fibers wherein the ratio of reinforcement to resin lied in the range of 0.5-2.0. Clearly, the same would have included half as much resin to the amount of reinforcement in the finished reinforcing layer. Note that Japanese Patent '852 was utilizing mats as the reinforcing material (an alternative to the roving material of E.P. '795). One noting the same would have understood that whether the reinforcement was in the form of rovings or mats that the amount of reinforcement present to resin utilized in the same would have been within the range of .5-2.0 as suggested by Japanese Patent '852 (note that the use of more reinforcement than resin was suggested by E.P. '7'5 who inferred that the glass fibers would have ensured that the slabs were free from dampness and the use of the specified amounts would have rendered a tough and bend resistant reinforcement as suggested by Japanese Patent '852. It certainly would have been within the purview of the ordinary artisan to provide a stone panel which was

reinforced with a linear reinforcing member wherein the reinforcement included a resin therein in a percentage of twice as much reinforcing material to the amount of resin as suggested by Japanese Patent '852 in the process of making a stone panel as taught by E.P. '795.

With regard to claim 22, the reference to E.P. '795 suggested the use of glass strands. Regarding claim 23, the reference to Japanese Patent '852 suggested that twice the amount of reinforcement to resin would have been present. Regarding claims 24 and 25, the reference to E.P. '795 suggested that the stone slabs would have had a thickness of 5-7 mm.

While it is believed based upon the discussions contained within E.P. '795 that one skilled in the art would have applied the longitudinal, non-twisted reinforcement directly against the stone panel, to further evidence that those skilled in the art would have performed the same the reference to Japanese Patent '076 is cited. The reference made it clear that one skilled in the art would have applied the unidirectional fiber reinforcement against the back of the stone in order to adequately reinforce the same, see layer 102. As described in the abstract, the layer 102 was formed of unidirectionally oriented fibers and the same were utilized to reinforce a stone slab 100. In order to provide adequate reinforcement to a stone panel, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the techniques of E.P. '795 to provide a longitudinal, non-twisted reinforcement against a stone panel as suggested by Japanese Patent '076 wherein the specific amount of resin remaining in the panel would have been determined through routine experimentation and would have included amounts as specified by applicant as evidenced by Japanese Patent '852.

Claims 8-13 and 26-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over E.P. 631,015 in view of Japanese Patent 6-64076, Japanese Patent 3-247852, and E.P. 255,795.

E.P. '015 taught the basic reinforced panel of stone material which included grooves therein into which a longitudinal reinforcing element was disposed. The reference taught the use of steel or glass reinforcing material for the reinforcement disposed within the grooves. The reference failed to teach the use of plural layers of reinforcement (which included a reinforcement of unidirectionally, non-twisted reinforcing glass fibers therein) wherein the amount of resin in the reinforcing material would have been less than the amount of reinforcing material disposed therein and wherein the additional reinforcing layer was formed from longitudinally disposed filaments which were non-twisted therein.

However, the use of multiple layers of reinforcement to reinforce a stone panel was known as evidenced by both Japanese Patent '076 and Japanese Patent '852. The incorporation of the specified amount of resin in the reinforcing materials was suggested by Japanese Patent '852 and the specific amounts would have been determined through routine experimentation (as addressed above the reference to E.P. '795 discussed below, suggested that one skilled in the art would have incorporated the glass fibers therein for dampness removal and one would have readily ascertained that a greater amount of reinforcement to resin would have been useful for dampness removal). The appellant is referred to the abstract of the disclosure wherein the same suggested that the ratio of reinforcement to resin would have been .5 to 2.0. the use of non-twisted reinforcement to strengthen the backside of a stone panel was suggested by Japanese Patent '076. The applicant is advised that one skilled in the art would have appreciated that the reinforcement employed in the operation would have been continuous non-twisted roving as the same provided the best strengthening reinforcement in the finished composite panel as evidenced by E.P. '795. The applicant is referred to the various figures which reference the rovings when

used as a reinforcement and that the same provided the finished panel with the greatest strength. Because it was known to employ multiple layers of reinforcement against the back of a stone panel to reinforce the same as evidenced by either one of Japanese Patent 6-64076 or Japanese Patent 3-247852 (note that Japanese Patent '852 evidenced that those skilled in the art would have utilized an amount of resin as specified by applicant while Japanese Patent '076 suggested that some of the multiple plies of reinforcement would have included unidirectionally oriented non-twisted glass filaments) when forming a panel which included grooves and reinforcing material disposed therein as suggested by E.P. '015 and wherein the reinforcing material would have included plural layers of longitudinally extending non-twisted reinforcing materials as suggested by E.P. '795.

The particular amount of resin selected as well as the type of reinforcing materials used was certainly known as evidenced by the prior art as set forth above and the selection of a specific type of reinforcement as well as a specific amount of resin would have been within the purview of the ordinary artisan and clearly would have directly effected the degree that the stone slab was reinforced (as evidenced by E.P. '795). The selection of the specified reinforcement would have been within the skill level of the ordinary artisan and such a determination would have been made through routine experimentation.

(11) Response to Argument

The appellant's arguments beginning on page 7 of the Brief and continuing until page 19 relating to the issue of recapture and the rejection under 35 USC 251 are not persuasive. The appellant essentially argues that: (1) the reasons for allowance included parenthesis therein which subject matter in the parenthesis were not part of the reason for allowance (because the

parenthesis is not considered an essential part of the sentence in the construction of the same) where the information contained in the parenthesis was limited to the lack of grooves or recesses on the face of the stone slab; (2) there was a narrowing of the claim (namely the inclusion of a layer of the non-twisted linear reinforcement made of glass against the rear of the slab) in a sense which was not considered in the patenting of claim 1 while there was no "broadening" because the omitted limitations did not relate to subject matter added to define over the prior art; and; (3) the limitation relating to the inclusion of a reinforcement layer between the coated non-twisted reinforcing elements and the rear face of the stone slab was not identified by the examiner as the reason why claim 1 was allowed in the patented file and this limitation related to a different embodiment of invention from that which is not being claimed. These arguments are not persuasive for the following reasons.

As established above, the surrender of the omitted subject matter which was in fact key to the allowability of claim 1 in the patent was not based solely upon the examiner's reason for allowance. Appellant *presented* the omitted limitations in the amendment dated 12-23-96 in response to a prior art rejection and additionally *argued* that these limitations further defined over the prior art in the response. The reasons for allowance merely identified these two omitted limitations (the lack of grooves or recesses and the inclusion of a reinforcement between the slab and the non-twisted linear reinforcement) as the reason that claim 1 was allowable over the prior art. Had the limitation to the lack of recess or grooves in the rear of the slab not been considered as why the claim was allowable, the examiner's statement of reasons for allowance would have had to state that the sole reason for allowability was the inclusion of the reinforcement between the non-linear reinforcing members and the stone slab and that the lack of grooves or recesses

was not persuasive. The reasons for allowance simply does not state that the lack of grooves or recesses was not a reason for allowance and therefore the appellant's reliance on the language in the parenthesis is not persuasive. It was the totality of the actions taken by appellant including the presentation of the omitted limitations into claim 1 as well as the arguments relating to the prior art rejection and how the omitted limitations defined over the prior art of record which gives rise to the recapture problem. The examiner's reason for allowance is further additional evidence that the exclusion of the claimed limitation which was previously surrendered by appellant is recapture but it is not the sole basis for the rejection.

With respect to the narrowing of the claim, while it is correct that claim 21 is narrower in that it required that the non-twisted linear reinforcement be in the form of glass and in the form of a layer, the narrowing of the claim is not related to why claim 1 of the patent was allowed in the patented file. As addressed above, these narrowing limitations are **not** at all related to the "omitted limitations" of a groove and recess free rear surface of the slab and the insertion of a layer of reinforcement between the coated non-twisted reinforcing elements and the rear face of the slab of stone material and the manner in which they defined over the prior art. Since the narrowing aspect is not related to the prior art rejection and not related to the subject matter surrendered in the original application, recapture exists and claims 21-38 are properly rejected under 35 USC 251.

Lastly, relating to the omission of the language relating to the use of a reinforcing layer between the non-twisted linear reinforcing members and the backside of the stone slab, the appellants argument that such was not present in the reasons for allowance is not understood. The reasons for allowance in the patented file expressly referred to the fact that the prior art

failed to dispose "a reinforcing layer between the linear reinforcing elements and the rear face of the slab of stone material". Additionally, this limitation (which was originally presented in claim 7 of the application which matured into a patent) was added to claim 1 in the response to the prior art rejection and was argued by appellant in the response as a reason the claimed invention defined over the prior art. Certainly, then, the omission of the language relating to the inclusion of a reinforcement between the linear reinforcing member and the rear surface of the slab is a recapture of previous subject matter surrendered by appellant and the rejection under 35 USC 251 should be sustained.

Regarding the prior art rejection, and appellant's arguments starting on page 19 of the Brief., the appellant initially noted that because claim 1 was indicated as allowable that claims 8-13 which depend therefrom must also be allowable. This simply is not the case because claim 1 expressly stated that the slab was free from grooves and recess while claim 8 recited that the slab contained grooves or recesses therein. While the prior art of record as indicated in the reasons for allowance of the patented file failed to teach the application of reinforcement of the type claimed upon a surface which was free from grooves or recesses, the prior art did teach the inclusion of reinforcement into grooves disposed on the rear face of a slab as suggested by E.P. '015. The claims (8-13) therefore are not necessarily allowable just because they depend from an allowed claim. Significantly, it is the additional limitations added by dependent claim 8 (the grooves or recesses) which gives rise to a rejection of these claims over the prior art of record.

The appellant then argues regarding the rejection of claims 21-25 that a critical distinction to be made is that the glass fiber reinforcement is non-twisted in nature. The appellant takes the position that none of the prior art applied , the references to Japanese Patents '852, '076

and E.P. '795, all failed to teach the use of non-twisted fiber reinforcement in the form of glass. This has not been found to be persuasive. Note that the reference to E.P. '795 suggested that one would have utilized a roving. A glass roving would have been understood to have been a strand of fibers which had either no twist or were only slightly twisted. The reference to Japanese Patent '076 clearly depicted a layer of glass fiber reinforcement where the layer was oriented mono-directionally, see the abstract of the disclosure and Figure 1 of the same where layer 102 clearly included reinforcing fibers disposed in a single direction. Certainly, such is evidence that the glass fiber reinforcement would have been of a non-twisted variety. If the same were twisted, then a monodirectional layer would not have been achieved in Japanese Patent '076.

It is agreed that the reference to E.P. '795 failed to teach the specific amount of resin in the reinforcing layer, however the reference to Japanese Patent '852 clearly suggested the range of resin to reinforcement desired in manufacturing a strong and structurally reinforced stone slab. The appellant cannot show non-obviousness by attacking references individually where combinations of references have been applied against the claimed invention. Note that Japanese Patent '852 was clearly concerned with the same problem identified by E.P. '795 (the reinforcement of a thin slab of stone) and that the reference clearly suggested that one skilled in the art would have determined the suitable amount of resin included in the reinforcement layer as a function of the amount of reinforcement. Such would have been performed though routine experimentation with none but the expected strengthening of the slab of stone as the result. The appellant seems to infer that because the reinforcing material is chopped fibrous material that the teachings of Japanese Patent '852 would have been irrelevant. However, as noted above E.P. '795 not only suggested that roving would have been useful for the reinforcing material but also

matting material would have been useful. The material of Japanese Patent '752 was in fact a form of matting material. Clearly, the concerns and suggestions of Japanese Patent '752 were relevant to the question of obviousness under 35 USC 103(a) and the techniques of E.P. '795.

The appellant argues that the stone slab of E.P. '795 was not a smooth stone slab. The appellant noted that merely because the slab was freshly cut such would not have meant that the surface of the stone slab was smooth. The appellant is advised that a flat surface of a stone slab just cut would be "smooth" within the meaning of the term as applied by appellant. The slab would not have had grooves or recesses therein. The surfaces of the thin slabs would have been understood to have been flat. Surface flatness would have equated to a "smooth surface" in much the same way that the top of a table or desk (which is flat) would have presented a smooth surface. The figures in E.P. '795 suggested the same.

The appellant next addressed the reference to Japanese Patent '852 and suggested that: (1) the disclosure therein of "chipped strand" teaches away from the non-twisted linear glass reinforcing members; (2) the reference taught a multilayer structure which was quite different from the claimed invention, and; (3) the Japanese patent taught the inclusion of the reinforcement for strength and bendability properties which is totally different from the purpose proposed by appellant for using the reinforcement in this application. These arguments are not persuasive. Regarding the use of "chipped strand", the appellant is advised that the reference to E.P. '795 suggested that one skilled in the art would have included the use of linear reinforcement (the glass rovings) as well as matting reinforcement. The reference thus suggested that the one of ordinary skill in the art would have readily appreciated that various types of reinforcement including continuous strands or rovings as well as chopped strands or roving

would have been alternative types of reinforcement in the art of reinforcing a slab of stone which were recognized as useful for their known advantages and disadvantages. Thus, one would have chosen to utilize a continuous reinforcement or a chopped reinforcement in the operation. Additionally, the amount of resin employed with such reinforcement would have been determined through routine experimentation to provide a ratio of reinforcement to resin of between .5 to 2.0 as suggested by Japanese Patent '852. The inclusion of more glass than resin was clearly suggested by E.P. '795 which taught that the use of the glass would have made the laminate damp proof.

Regarding the second argument by appellant, that the use of a multilayer structure was much different from that of the claimed invention, the appellant is advised that a multilayer structure was taught by the claimed invention where a reinforcement was disposed between the linear reinforcing members and the stone slab. Additionally, the amounts and type of reinforcement added would have been determined through routine experimentation in order to impart the desired bending resistance and strength to the finished slab. As evidenced by E. P. '795, one skilled in the art would have performed these strength tests routinely in order to determine which reinforcement operated the best and under which conditions the reinforcement provided superior strength to the finished slab, see Figure 7 for example. Note that the reference to E.P. '795 was concerned with the strengthening of the thin slabs in order to attain a thin slab which would have been useful in decorating a structure. The reference to Japanese Patent '852 was additionally concerned with the strengthening of the slab.

Regarding the appellant's last argument that the reference to Japanese Patent '852 was only concerned with the reinforcement of the slab in order to provide strength and bendability

and that this had nothing to do with appellant's claimed invention the following arguments apply. First, the reason for making the combination under 35 USC 103(a) need not be the same reasons presented by appellant. All that 35 USC 103(a) requires is that these is some motivation for making the combination and a reason why one would have considered the teachings of the prior art relevant to the claimed invention in a manner which would have rendered the claimed invention obvious. There is nothing which requires that the combination to have been made for the same reason that appellant proposed in making their invention. The fact remains, regardless of the reason, that one viewing Japanese Patent '852 that one would have found the reference relevant to the problem of applying reinforcement to a stone slab whether it was for increased strength or for increased water resistance. The appellant is additionally advised that the reference to E.P. '795 suggested that the strengthening of the slab was an important feature in the combining reinforcement to a stone slab and this is the same problem identified by Japanese Patent '852. One skilled in the art would have been motivated to combine the teaching for this reason.

Regarding the reference to Japanese Patent '076, the appellant argues that hindsight was used by the examiner, however, this simply is not the case. As discussed above, there were specific reasons identified as to why one skilled in the art would have utilized non-twisted glass fiber linear reinforcing elements. The reference to E.P. '795 suggested that glass roving would have been utilized. The reference to Japanese Patent '076 merely was cited to show that such roving would have been disposed as a unidirectionally oriented layer when reinforcing a slab. Such would have been provided in order to provide the requisite reinforcement (strengthening) needed in the stone slab. As discussed above there were specific reasons identified as to why one

skilled in the art would have made the specified combination. For there to have been hindsight, one would have had to piecemeal the rejection together utilizing the claimed invention as a blueprint, however this is simply not the case herein where there was ample motivation provided as to why one skilled in the art would have made the combination.

Regarding claim 8-13, the appellant argues that claim 1 is allowable and therefore claims 8-13 are allowable. However, claim 1 required that there be no grooves or recesses while claim 8 clearly recited the inclusion of grooves or recesses in the backside of the slab which was to be reinforced. The references applied to the rejection of claims 8-13 started with a reference which included grooves or recesses therein which incorporated reinforcement in the grooves or recesses. The appellant is advised that claim 1 stands as allowable over the prior art of record because no reference taught reinforcement of a stone slab which was free of grooves or recesses which included a reinforcement disposed between the linear reinforcing members and the stone slab (as clearly identified in the reasons for allowance in the patented file from which this reissue depends).

Regarding the prior art rejection of claims 8-13 and 26-38, the appellant argues that the rejection of claims 26 and 27 should be removed because these claims do not include grooves or recesses therein. However, claims 26 and 27 do not exclude the presence of grooves or recesses therein. Claim 21 does not exclude the presence of grooves or recesses therein and therefore the rejection of claims 26 and 27 with a reference which included grooves or recesses therein is not misplaced. Claims 26 and 27 related to the inclusion of multiple layers of reinforcement and the references to Japanese Patent '852 as well as Japanese Patent '076 suggested such multiple layers of reinforcement. Appellant's argument in this regard it not persuasive.

Regarding the use of E.P. '015 as a reference, the appellant argues that this application was an improvement over E.P. '015 as discussed in the background of the invention. The appellant then stated that what the examiner is suggesting is that Toncelli should have known and been aware that the improvement was obvious at the time the invention was made. The reference to Toncelli is available as prior art under 35 USC 103(a)/102. The modifications made since the reference came available would have indeed been obvious to one of ordinary skill in the art. Perhaps Toncelli did not have Japanese Patent '852, '076 or E.P. '975 before him when he filed this application, however this is of little import to the question of obviousness. The question to be answered is whether one viewing the prior art when taken as a whole would have found the claimed invention obvious and indeed herein one skilled in the art would have concluded that the claimed invention was in fact obvious to the ordinary artisan in light of the evidence of record and for the reasons identified above.

For the reasons stated above in relation to the prior art rejection as well as the recapture rejection under 35 USC 251, it is believed that the Final rejection should be sustained.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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/Ruth Montalvo Date: December 18, 1996

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Marcello TONCELLI Examiner: J. AFTERGUT

Serial No.: 08/513,687 Art Unit: 1301

Filed: August 11, 1995

For: **PROCESS FOR THE PRODUCTION OF REINFORCED SLABS OF STONE**

Assistant Commissioner for Patents,
Washington, D.C. 20231

AMENDMENT UNDER RULE 111

S I R:

In response to the Official Action of August 19, 1996, extended once to December 19, 1996, please amend this application.

In the Claims:

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a1

1.(Amended Once) A process for [the production of] producing reinforced slabs of products made of stone material, having a reinforcement which includes a hardened resin [of the hardening type] combined with a rear face of the slab, comprising

providing a slab of stone material having a rear substantially smooth

face free of grooves or recess;

providing non-twisted linear reinforcing elements[, and] ;

coating the non-twisted linear reinforcing elements with a coating of [the] a resin to form a reinforcement having a percentage ratio by weight of resin to the non-twisted linear reinforcing elements of at [least] most 50:50[.];

inserting a reinforcing layer between the coated non-twisted linear reinforcing elements and the rear face of the slab of stone material; and

hardening of the resin.

3.(Amended Once) The process according to claim 2, wherein said glass strands are in the form of a matting.

4.(Amended Once) The process according to claim 3, wherein the percentage weight ratio of the resin to the glass-strand matting is 33:66.

~~8~~ 7.(Amended Once) The process according to claim [7] 1, wherein the linear [said metal] reinforcing elements are made of metal, and the metal is steel.

~~9~~ 8.(Amended Once) The process according to claim 1, wherein [7 including housing said linear reinforcing elements in] grooves or recesses are formed [in] on said rear face of the slab and said linear reinforcing elements are housed in the grooves or recesses.

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a4 16 17.(Amended Once) The process according to claim 15, [including] wherein hardening of the resin is performed by the step selected from the group consisting of adding [with] a catalyst to the resin, [and/or the] application of heat to the resin, or combination of the addition of a catalyst and heat.

Please cancel claim 7, and add the following new claim 21.

a5 -- 20 21. The process according to claim 1, including applying two mats of non-twisted glass strands impregnated with 33% by weight of an epoxy resin, to provide for a linear expansion coefficient of the mat and resin combination between 15 and 30 x 10^{-6} per °C.

In the Specification:

Page 4, line 23, change "least" to --most--.

In the Abstract:

NE (see new abstract)

Please substitute the enclosed abstract for the present abstract.

REMARKS

The Official Action has been carefully considered and the Examiner's comments are duly noted. Reconsideration of this application in the light of the amendments for the specification, claims and abstract is respectfully solicited. A separate request for a one-month term extension has been submitted, but if for some reason it becomes detached, please use this as a request for a one-month term extension and our deposit order account no. 13-0025 may be charged.

With respect to the claims, claim 7 has been canceled, and the subject matter thereof has been included in claim 1 as amended. In addition, a new claim 21 has been added, and the subject matter thereof is derived from lines 10 to 14 of page 7 of the specification.

With respect to claim 1, as well as some of the other claims which have been amended, all of the formal objections noted by the Examiner have been taken into consideration. In addition, based upon the Examiner's notation with respect to claim 1, the term "least" in the last line of page 4, as well as in the abstract has been changed to "most" in view of the Examiner's notation.

Claim 1 was also amended to include the subject matter of claim 7 and the additional limitation of hardening of the resin, both which limitations clearly distinguish new claim 1 from the combination of references applied under

Furthermore, claim 1 has been amended so as to distinguish from natural stone, as well as products made of stone material. Clearly, some of the prior art cited by the Examiner refers to natural stone. Also, emphasis has also been added to the claim to establish that it is a rear face of a slab of stone material which is free of grooves or recesses, because as well pointed out, this is another distinction from the prior art.

Turning now to the prior art specifically cited by the Examiner, reference is made to EP 631,015 which the Examiner can well appreciate is applicant's own prior disclosure. In fact, this was submitted as a list of prior art cited by the applicant when the application was filed.

Considering Toncelli '015, this provides for a slab 10 which includes as a unitary structure, a grid 12 into which a lattice work of metal bars or strips 18 are inserted. In effect, once the lattice work 18 is inserted, then the resin is impregnated. This is clearly distinguished from claim 1, as the Examiner will appreciate it. However, it should be noted that the present invention eliminates the grid 12 and the reinforcing members 16. The Examiner, it is respectfully believed appreciates this, but has in turn cited certain other references.

Considering now, Bauer et al., or Bourke, and it should be noted that Bourke '233 is concerned with a marble lamina, see lines 54 to 56 of column 1. Furthermore, the marble lamina 4 is one part of a sandwich construction. Clearly

the teachings of Bourke apply to marble as a surface material, and should therefore be considered to be non-analogous art, because a marble lamina is the use of the original stone and not a stone material which includes materials other than stone. Also, this is primary concerned with a honeycomb construction which is clearly distinguished from the metal bar or strips 18 of the '015 patent and further, clearly distinguish from a slab having a rear face free of grooves or recesses.

Also, the thickness is quite different from the thickness set forth in claim 5 as well as claim 6 which provide that the slab's stone material have a thickness no greater than 10 mm, and more specifically, the slab's of stone material have a thickness between 6 to 8 mm.

On the other hand, '233 refers to the marble lamina which is quite different from the stone material. In any event, the sheet metal honeycomb structure is set forth and discloses as having a one to two centimeters thickness, and the Examiner is referred to lines 4 to 10 of column 3. All that work that sets forth, is that the problem of cracking after cutting as set forth in the last two lines of column 2 and the first three lines of column 3 is greatly reduced. What is meant by greatly reduced is difficult to assess, because it is not a comparison of one to another.

Turning now to Bauer et al U.S. Patent No. 4,973,506, this is also a sandwich construction in which natural stone is used. In this particular disclosure, the core layer has a honeycomb structure provided with a plurality of cells.

Reference is made to column 3, lines 43 to 45 in which the natural stone plate is defined as the panel. Even if Bauer et al, '506 were used to modify '015, one would still would not arrive at the applicant's claimed invention, as now claimed.

With respect to column 2, lines 72, column 3, line 3 of Bourke, as noted heretofore, there are distinctions and this refers to a thin marble lamina, and not slabs of stone material.

Turning now to the two Kourtides patents 4,135,019 and 4,193,829, and clearly do not modify Toncelli '015 to arrive at the present invention.

Clearly, Toncelli '015 calls for the formation of grooves, and the placement of the rods into the grooves, and then the placement of the resin into the grooves. Applicant starts out with a non-grooved surfaces, and creates the formation of areas between which the resin is inserted by calling for the provision of the non-twisted linear reinforcing elements on to a rear face of a stab of stone material having a rear face free of grooves or recesses. This clearly removes all of the references of record, because the main references has been removed, and therefore the modifying references have also been removed.

Another feature of the invention, and this is set forth as noted here in claim 5, is that the slabs of stone material have a thickness no greater than 10 mm.

A further feature of the invention is that claim 2 calls for non-twisted linear elements which consists of strands of glass. A feature of the invention is that the elements in claim 1 are non-twisted linear reinforcing elements. In all of the prior art used to modify Toncelli, whether it is a honeycomb structure or whatever, in effect, they would not be non-twisted linear reinforcing elements. Clearly, this removes the secondary references.

Then, there are a number of claims similar to claim 21, such as claims 18 to 20 which discuss the reinforcement material having a different temperature of coefficient of expansion, but so close to the coefficient of temperature expansion, that the slab of stone material does not become bent. This is an appreciation as set forth in claims 18 to 21, and in effect avoid detachment of the reinforcing pieces from the slab of stone material. The Examiner's attention for this feature is also referred to the table on page 7, and as earlier mentioned, it is important that the fibers are linear.

Another feature of the invention is that the article as made by the process directly adhered to the surface. Therefore, the glass strand, in addition to being thin is substantially compressible so that the top forms a smooth continuous surface. The prior art which basically is a sandwich structure will not present such a smooth continuous surface.

With the material as produced by the process of the present invention,

thin slabs of stone material are provided which can be easily and readily cut to provide the overall surface covering.

If there are any points outstanding, the Examiner is respectfully asked to call applicant's attorney, in order to do what is necessary to place the application into condition for allowance.

Early and favorable reconsideration is respectfully urged.

Respectfully submitted
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Enclosures:
A one month term extension
check in the amount of $ 55.00